**Assignment 16:** Suppose a date is represented as a tuple (d, m, y). Write a program to create two date tuples and find the number of days between the two dates.

**CODE:**

**def input\_tuple():**

**i = True**

**while i:**

**a = tuple(int(x) for x in input("\nEnter the date like dd,mm,yyyy eg 19,11,2023:").split(","))**

**if a[0] < 32:**

**if a[1] < 13:**

**if 999 < a[2] < 10000:**

**return a**

**else:**

**print("\nEnter correct date")**

**i = 0**

**print("\nFirst Date:")**

**a = input\_tuple()**

**print("\nSecond Date:")**

**b = input\_tuple()**

**a = a[2]\*365 + a[1]\*30 + a[0]**

**b = b[2]\*365 + b[1]\*30 + b[0]**

**print("\nNumber of dates between those dates are: ", abs(a-b))**

**Output:**

First Date:

Enter the date like dd,mm,yyyy eg 19,11,2023:19,11,2023

Second Date:

Enter the date like dd,mm,yyyy eg 19,11,2023:19,11,2003

Number of dates between those dates are: 7300

**Assignment 17:** Create a list of tuples. Each tuple should contain an item and its price in float. Write a program to sort the tuples in descending order by price. (Use operator.itemgetter() )

**CODE:**

**from operator import itemgetter**

**#list of tuples with item and their price**

**items\_prices = [("Pen: ", 12.50), ("Pencil: ", 6.25),("Notebook: ", 90.00), ("Book: ", 250.50)]**

**# Sorting the list of tuples in descending order by price**

**sorted\_items = sorted(items\_prices,key=itemgetter(1), reverse=True)**

**print(sorted\_items)**

**Output**

**[('Book: ', 250.5), ('Notebook: ', 90.0), ('Pen: ', 12.5), ('Pencil: ', 6.25)]**

**Assignment 18:** Store the data about shares held by a user as tuples containing the following information about shares: Share name, Date of purchase, Cost price, Number of shares, Selling price. WAP to determine: Total cost of the portfolio, Total amount gained or lost, Percentage profit made or loss incurred.

**CODE:**

**# Share name, Date of purchase, Cost price, Number of shares, Selling price**

**share = ("TCS", "2023-11-20", 3500, 10, 4150)**

**# Calculate the total cost of the portfolio**

**total\_cost = share[2] \* share[3]**

**# Calculate the total amount gained or lost**

**total\_gain = (share[4] - share[2]) \* share[3]**

**# Calculate the percentage profit made or loss incurred**

**percentage\_profit = (total\_gain / total\_cost) \* 100**

**print("Share: ", share[0])**

**print("The total cost of the portfolio is: ", total\_cost)**

**print("The total amount gained or lost is: ", total\_gain)**

**if total\_gain > 0:**

**print("The percentage profit made is: ", percentage\_profit)**

**elif total\_gain < 0:**

**print("The percentage loss incurred is: ", percentage\_profit)**

**else:**

**print("The portfolio has no profit or loss")**

**Output**

**Share: TCS**

**The total cost of the portfolio is: 35000**

**The total amount gained or lost is: 6500**

**The percentage profit made is: 18.571428571428573**

**Assignment 19:** WAP to remove empty tuple from a list of tuples.

**CODE:**

**# Tuple**

**list = [(97,68), ("Hritik"), (), ("Deepak","Kartik","Praful"), (), ("Study","Hardwork","Money")]**

**# count how many times empty tuple appears in list**

**empty = list.count(())**

**for i in range(empty):**

**# remove the first occurrence of () in each iteration**

**list.remove(())**

**print(list)**

**Output**

**[(97, 68), 'Hritik', ('Deepak', 'Kartik', 'Praful'), ('Study', 'Hardwork', 'Money')]**

**Assignment 20:** WAP to create following 3 lists: A list of names, a list to roll numbers, a list of marks. Generate and print a list of tuples containing name, roll number, and marks from the 3 lists. From this list generate 3 tuples- one containing all names, another containing all roll numbers and third containing all marks

**CODE:**

**names = ["Deepak", "Hritik", "Kartik", "Manish", "Praful"]**

**roll\_numbers = [40, 97, 68, 13, 95]**

**marks = [45, 63, 75, 78, 67]**

**# packing lists**

**list\_of\_tuples = list(zip(names, roll\_numbers, marks))**

**print(list\_of\_tuples)**

**# Unpacking lists**

**names\_list, roll\_numbers\_list, marks\_list = zip(\*list\_of\_tuples)**

**names\_tuple = tuple(names\_list)**

**roll\_numbers\_tuple = tuple(roll\_numbers\_list)**

**marks\_tuple = tuple(marks\_list)**

**print(names\_tuple)**

**print(roll\_numbers\_tuple)**

**print(marks\_tuple)**

**Output**

[('Deepak', 40, 45), ('Hritik', 97, 63), ('Kartik', 68, 75), ('Manish', 13, 78), ('Praful', 95, 67)]

('Deepak', 'Hritik', 'Kartik', 'Manish', 'Praful')

(40, 97, 68, 13, 95)

(45, 63, 75, 78, 67)